

# Design and Implementation of a Physics GTA Development Program

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# Background

- **The Old Way: “TA Training”**

- Disjointed training elements; low TA motivation; lack of transferable skills

- **The New Way:**

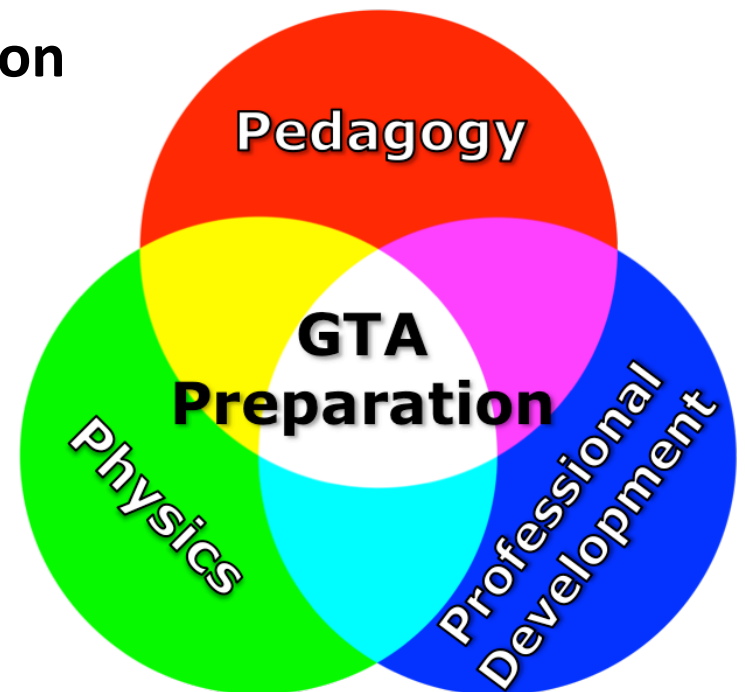
## **Integrate** Physics, Pedagogy, and Professional Development

- One-semester course for first year PhD students
    - Cycle 1 – Fall 2013 (22 GTAs)
    - Cycle 2 – Fall 2014 (13 GTAs)
    - Next: Cycle 3 – Fall 2015 (34 GTAs)
  - Curriculum revisions every year based on past results and GTA feedback
  - Ongoing longitudinal study to assess program effectiveness

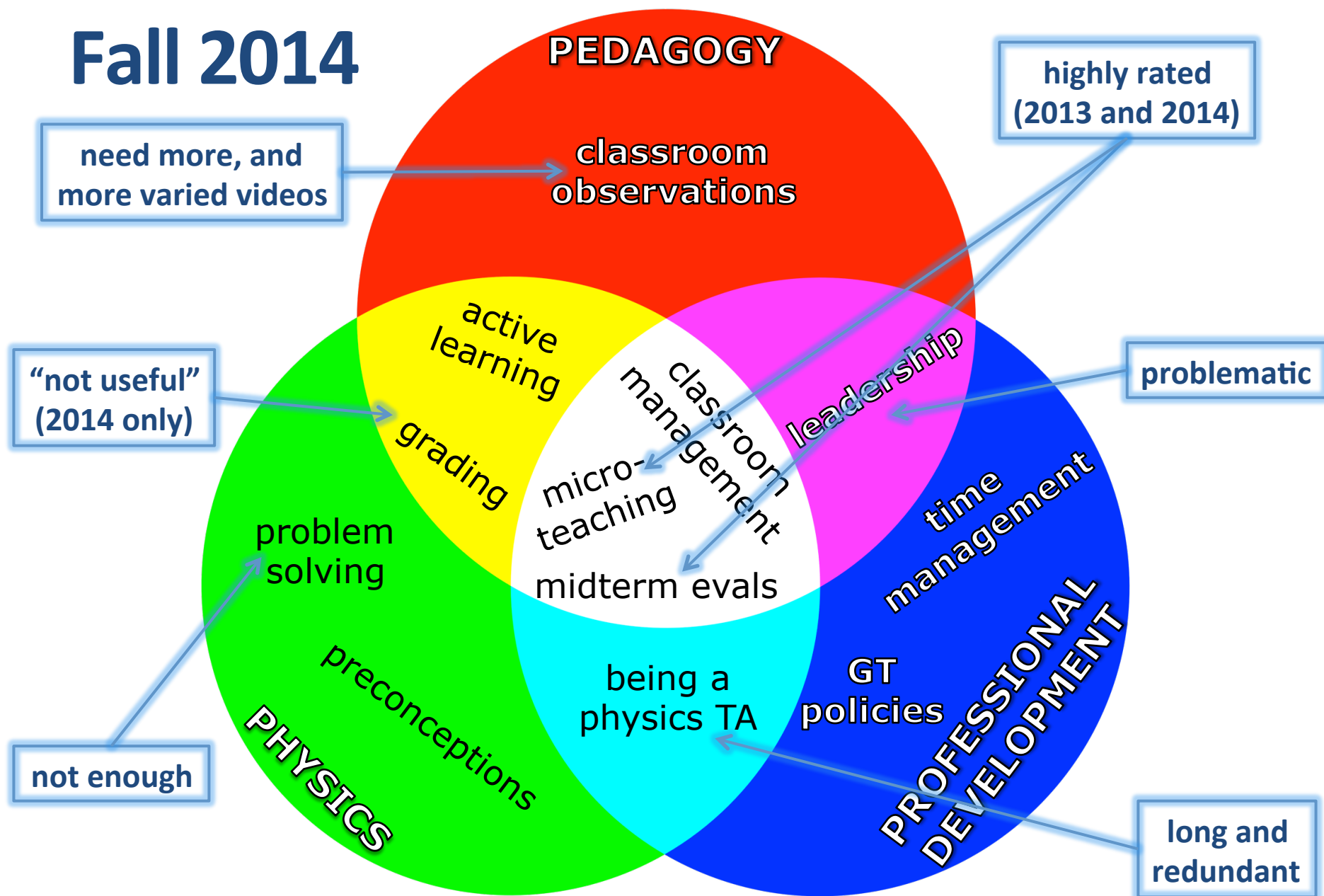


# The Three P's

- **Physics** – content is important
  - Need to make sure GTAs know the material well enough to teach it
- **Pedagogy** – how to teach is important
  - Just because GTAs know physics doesn't mean they know how to teach it or how to help students learn it
- **Professional Development** – preparation for their future careers is important
  - GTAs are better motivated when they can see how teaching helps them achieve their professional goals
- **Integration** – all three elements must correlate and work with each other to better prepare GTAs



# Fall 2014



# Changes for Fall 2015

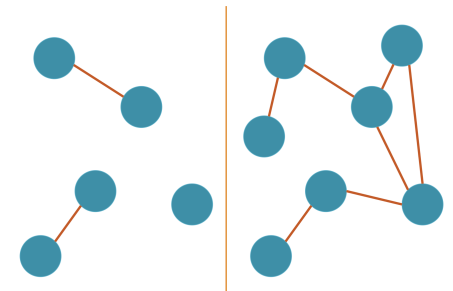
- **Pedagogy**

- Instructor observations AND peer observations
- More discussion of video observations
- More on giving and receiving teaching feedback



- **Physics**

- More problem-solving, including during microteaching
- Grading practice (“micrograding”)
- Expert/novice issues
- Anticipating student questions



- **Professional Development**

- “Teaching and Research”
- Guest faculty speakers
- More mentoring



# Fall 2015

